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## A stakeholder's evaluation of collaborative processes for maintaining multi-functional floodplains: a Dutch case study

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### ABSTRACT

All over the world, governments have established integrated river basin management projects on local and regional scales to combine functions, such as flood protection, nature restoration, and other potentially conflicting land uses (e.g. recreational and agricultural activities). This has led to collaborative arrangements between diverse administrative levels, sectors and actors in the planning and implementation phase. Following the finalization of the implementation phase, a new floodplain maintenance phase is called for. Maintaining multi-functional floodplains involves, for example, monitoring, the development of ecological infrastructure and the coordination of maintenance activities. This paper addresses how collaborative processes continue and are further shaped in the maintenance phase. Regional stakeholder's frames were examined with respect to the following components: incentives, collaborative process, allocation of tasks including related responsibilities, and outcomes. Analysis of an unsuccessful case study indicates that the collaborative processes on the organizational and action levels were insufficiently connected, because of the lack of a strategy to integrate the outcomes of both processes. Moreover, underlying conflicting perspectives on collaborative maintenance, an economic perspective versus a perspective of collaboration with a platform of local nature organizations, obstructed effective collaborative governance aimed at maintaining multi-functional floodplains.

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frames; multi-stakeholder  
approach

### 1. Introduction

During the last few decades, river management has been guided by newly introduced governance approaches, because of the need to integrate scales, actors, and sectors (e.g. Imperial 2005, Robinson *et al.* 2011, Dewulf *et al.* 2015, Plummer *et al.* 2016). One example of these new approaches is collaborative governance, which is defined as the processes and structures of public policy decision-making and management existing between governmental, non-governmental, and/or civic actors that create public services and values (e.g. Emerson *et al.* 2011). This approach, as well as related concepts such as environmental governance (Evans 2012) and adaptive governance (Folke *et al.* 2005, Stringer *et al.* 2006), are characterized by a shift from hierarchical and well-regulated forms of government towards less formalized governance through the utilization of stakeholder networks that extend beyond the government sector (Huitema and Meijerink 2014). All these governance approaches refer to a collaborative form of river management, which can be applied in integrated river basin management. Rijke *et al.* (2012, p. 371) defined integrated river basin management 'as a comprehensive water management approach that aligns multiple objectives in a river basin across different spatial scales and temporal dimensions'. This integrative approach is similar to management approaches, such as integrated water resources management (Jusi 2009) and integrated watershed management (Blomquist and Schlager 2005), but differs in the focus on rivers and their floodplains, in other words, the river basin scale.

Projects and programmes based on integrated river basin management are visible in, for example, Europe and North America (Warner *et al.* 2013). In 2005, a strategic programme 'Making Space for Water' was launched in England that aimed to create win-win solutions for flood defence and riverine ecology (Potter 2013). In the Netherlands, the integrated and collaborative approaches are reflected in the national implementation programme called *Room for the River* (Rijke *et al.* 2012). This programme led to a shift from the former one-dimensional agricultural function to multi-functional floodplains, that combine flood protection, nature restoration, the mining of sand and clay, recreation and agricultural (Pahl-Wostl 2006).

The almost completion of the planning and implementation phases of the above-mentioned programmes calls for the initiation of a new maintenance phase. The planning and implementation phases resulted in land-use changes, while the maintenance phase should address monitoring, the development of ecological infrastructure, and the coordination of maintenance activities. However, it is uncertain how collaborative governance should continue and develop during the maintenance phase. It is accepted among stakeholders that the maintenance phase forms an important aspect of integrated river basin management; however, this phase has traditionally received little attention from policy-makers. For example, the realization of the *Room for the River* project near Nijmegen, where a new island was created by digging an artificial side channel, is politically more interesting.

Additionally, the maintenance phase is confronted with long-term visioning and a collaborative process that often exceeds the standard government four-year term. The need for collaborative maintenance is stressed by declining state budgets, single-goal-oriented maintenance activities and fragmented land ownership (Fliervoet *et al.* 2013).

In the maintenance phase, governmental organizations require new collaborative arrangements in the decision-making process in order to sustain the multi-stakeholder approach adopted in the planning and implementation phase. Researchers and practitioners argue that only improving coordinated arrangements is not sufficient to realize integrated river basin management (Watson 2004, Warner *et al.* 2016). The emergence of collaborative arrangements creates new challenges, for example, the need to resolve conflicts that arise when stakeholders are driven by different incentives or expectations with respect to the collaboration (Leach *et al.* 2002). Other sources of potential conflict are the differing functions of floodplains that different actors promote. For example, water managers may want to remove vegetation for flood safety reasons, while nature managers may pursue a non-interventionist approach which allows spontaneous nature development, a strategy which is reflected in legislation such as the European Natura 2000 policy. This issue is referred to as the ‘nature-safety dilemma’ (Vreugdenhil 2010). Studies have also highlighted a need for greater understanding of stakeholder’s frames on the allocation of tasks and related responsibilities during the planning of collaborative river management processes (e.g. Curtis *et al.* 2002, Parker *et al.* 2010). Moreover, researchers have identified a series of factors that are crucial to the collaborative process itself, such as building trust, face-to-face dialogue, flexibility, leadership, and the setting up of learning environments for collaborative governance (Ansell and Gash 2008, Emerson and Gerlak 2014).

This article contributes to a better understanding of the challenges posed by collaborative governance as perceived by stakeholders on a regional and local scale in river management by making use of a case study in the Netherlands. The aim of this article is to explore the different perspectives and interpretations of stakeholders by using a framing approach regarding the function, division of responsibilities between public and private actors and the stakeholder’s lessons learned from the collaborative processes applied when maintaining floodplains. Framing methodologies are applied in a wide range of disciplines and are ‘generally focused on studying the various ways in which people strategically make sense of reality and how they add meaning to ambiguous and complex situations’ (van den Brink 2009, p. 35). Different underlying perspectives often prevent stakeholders from finding common ground (Gray 2004) and thus form an obstacle for shared understanding. Understanding stakeholder frames will provide insights into how stakeholders envision their responsibility in floodplain management, the complexity of collaborative governance, and ultimately how stakeholders resolve conflicts of interests.

In a Dutch case study attempts were made to initiate a new collaborative approach on a local scale that aimed to maintain the multiple functions of the ‘Rijnwaardense Uiterwaarden’ (Rijnwaardense floodplains). Ultimately, stakeholders were unable to apply integrated and collaborative floodplain management which created opportunities to gain insights into current challenges and provided lessons for the future. The

case study describes two collaborative processes. The first, the Coordination Council, is a platform that facilitates communication between governmental organizations and private land owners on an organizational level. The Coordination Council is concerned with collective choices, the tuning of organizational programmes, and is tasked with finding a shared maintenance vision for the ‘Rijnwaardense Uiterwaarden’. The second process, occurring on the action level, was a collaborative platform existing between local nature managers (hereafter referred to as the Stewardship), and was initiated and facilitated by governmental organizations to operationalize integrated floodplain management based on the council’s maintenance vision. Despite both collaborative processes leading to a consensus about integrated maintenance visions and action plans, the implementation of these plans was prevented by the governmental organizations. To gain further insight into the implementation gap that occurred between these two collaborative platforms, we refined our research aim by posing three specific research questions:

- (1) How do stakeholders reflect on their incentives, the collaborative process itself and the intermediate outcomes resulting from the processes of the Coordination Council and the Stewardship?
- (2) Which lessons are learned among the stakeholders with respect to both collaboration processes and their interdependency?
- (3) How do stakeholders allocate public and private responsibilities for maintenance tasks and how will this affect future collaborative governance?

Answering these questions will lead to a deeper understanding of the present challenges to the continuity of collaborative governance in the maintenance phase of river management. In this article we use the term floodplain management when referring to the maintenance of multi-functional floodplains.

## 2. Theoretical framework

### 2.1. Collaborative governance and components of the collaborative process

The term collaborative governance is defined by Emerson *et al.* (2011, p. 2) as:

the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished.

In other words, collaborative governance refers to a negotiation process between diverse stakeholders that aims to establish collective goals or shared understanding (e.g. Margerum 2011). Studies recognize diverse components that need to be understood before analysis of the collaborative process is undertaken (Selin and Chavez 1995, Ansell and Gash 2008, Emerson *et al.* 2011). Literature distinguishes three, highly simplified, collaborative components: (1) starting conditions (antecedents); (2) the collaborative process itself, including the problem setting, direction setting and structuring components defined by Selin and Chavez (1995); and finally (3) outcomes. All these components are essential for the establishment of collaborative initiatives to

maintain floodplains. This is particularly true of the maintenance phase as new potentially conflicting interests become apparent at this stage. In particular, the interests of local nature conservation organizations, land owners and farmers, who combine agricultural activities with nature management on their property, are added during the maintenance phase (Fliervoet and van den Born 2016). These new interests emerge because maintenance tasks and activities often include all floodplain areas on a local scale, including locations where no management interventions were carried out. Studies also indicate that collaboration occurring at different levels needs to be taken into account when analysing collaborative processes (Imperial 2005, Margerum 2008). Margerum and Robinson (2015) distinguished three levels of collaboration in water management; (1) policy level; (2) organizational level; and (3) action level. Both collaborative processes included in the Dutch case study deal with the same floodplain area, but occur at different levels of collaboration. The Coordination Council acts at an organizational level, while the Stewardship attempts to implement the council's maintenance vision at an action level.

Figure 1 shows the diverse collaborative components of both collaborative platforms. Starting conditions include an analysis of stakeholder's incentives and pre-existing associations because previous collaborative failures involving the same stakeholders can result in low initial levels of trust and poor relationships, complicating new collaborative efforts (Ansell and Gash 2008).

The components of the collaborative process are actualized during face-to-face dialogue between stakeholders and the iterative and dynamic negotiation process. Emerson *et al.* (2011) and Ansell and Gash (2008) define diverse stages of collaboration that stakeholders have to traverse, such as trust building, commitment to the process and shared understanding. Many studies argue the importance of building trust between stakeholders as a prerequisite to an effective and successful collaborative process (e.g. Huxham and Vangen 2005, Reed 2008). Additionally, successful collaboration is dependent on the presence of an effective coordinator or facilitator (Leach and Pelkey 2001). In the context of collaborative governance, studies emphasize the re-distribution of responsibilities among complex networks of private and voluntary or community organizations (Watson 2004, Ansell and Gash 2008). Ansell and Gash (2008) explain this shift by using the concept of 'shared ownership of decision-making', which implies shared responsibilities. However, the shift towards shared ownership also creates new dilemmas because stakeholders have to make collective decisions with other stakeholders who may hold a conflicting perspective (Ansell and Gash 2008). Moreover, public and private organizations have overlapping responsibilities and tasks, and studies expect that a collaborative approach offers opportunities to reduce duplication, reduce conflict and to share data and expertise (Gray 1989).

If the above-mentioned issues are addressed, stakeholders apply the outcomes of the collaborative process to derive benefits by formulating and implementing collective agreements. According to Watson's (2015a, p. 60) outcomes 'are actual consequences and benefits such as improved environmental quality, reduced conflict, enhanced knowledge and problem-solving capacity, and more efficient or equitable use of natural resources'. In the 'Rijnwaardense Uiterwaarden' case presented here, the attempted collaboration resulted

in no shared action, preventing efficient floodplain management. Therefore, we will focus on the outcomes of both collaborative processes. Because collaborative processes are interactive and influence each other, this study also analyses the interaction between the two collaboration levels, which is represented by a feedback arrow, originating at the outcomes box on the action level and leads to collaborative process box on the organizational level (Figure 1).

## 2.2. Frames

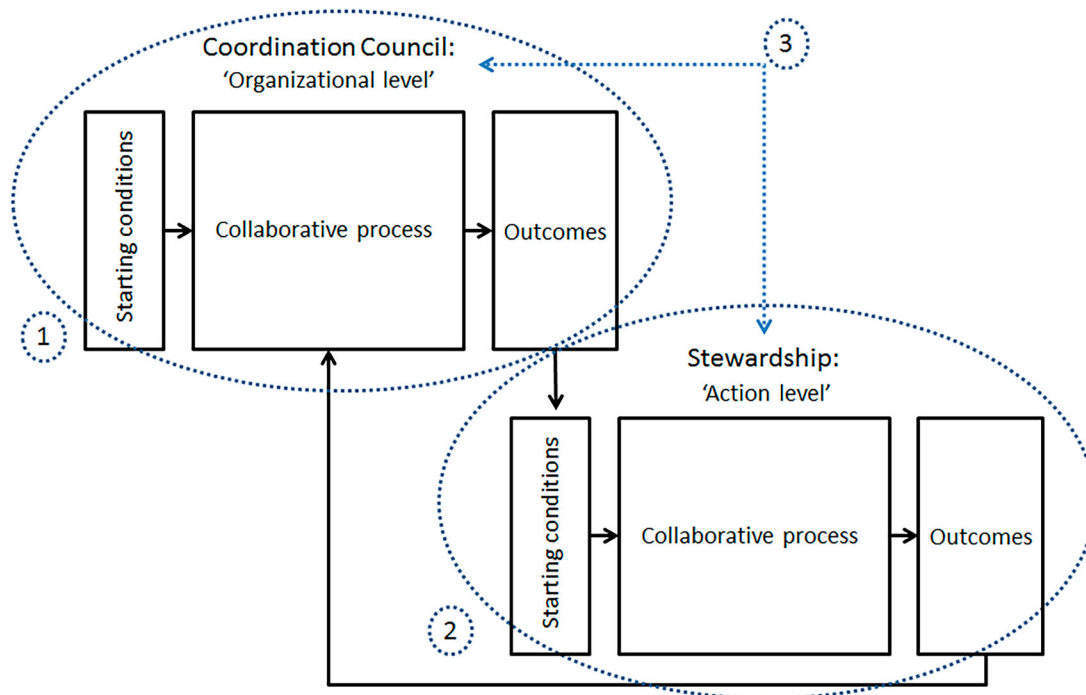
Literature indicates that collaboration is a distinct type of process that is complex, dynamic, iterative, and unpredictable, therefore many studies emphasize the importance of exploring different perceptions, understandings or frames in collaborative settings (Termeer 2009, Dewulf *et al.* 2011, Watson 2015b). During collaborative processes diverse stakeholders work together, often tending to frame the issues at hand in very contrasting ways by defining 'what this is all about' differently (Dewulf *et al.* 2007). According to Weick (1995), a frame can be understood as a sense-making device. In this article, the theory of framing is used to elucidate frame differences or alignments regarding components of the analytical framework (Figure 1). The theory of framing developed in the domain of multi-actor collaboration is used (Gray 1989, Hardy *et al.* 2005, Dewulf *et al.* 2011). This framing approach reveals how stakeholders frame problems and give meaning to issues experienced during conflicts that arise as a result of, for example, fragmentation of maintenance activities and conflicting policies.

Stakeholder's frames with respect to incentives, the collaborative process, intermediate outcomes and the lessons learned by them are analysed. Because multi-stakeholder collaboration is also about learning how to cope with and take advantage from diversity (Leach and Pelkey 2001, Raadgever *et al.* 2012). For example, stakeholders may have different perceptions of what the main problems are, what is at stake and which goals should be achieved, which may provide a source of uncertainty in the collaborative process (van der Keur *et al.* 2008). Additionally, stakeholders may also hold frames about themselves, others and relationships (Dewulf *et al.* 2009). Relationship frames are derived from the stakeholder's evaluation of the process, in particular on the development of mutual trust, and the stakeholder's assessment of public and private responsibilities regarding maintenance tasks. Finally, stakeholders hold frames relating to the interaction process between themselves during conflict, such as frames on how conflicts should be managed (Dewulf *et al.* 2009). Overall, 'conflict may not be resolved if frames are ignored and reframing is lacking' (Mostert *et al.* 2008).

## 3. Methods

To explore stakeholder's frames with respect to collaborative floodplain management, a case study of an unsuccessful collaboration attempt was undertaken where a failure to establish collaborative agreements to maintain floodplains occurred. The case study approach is a useful method that facilitates the description of phenomena, such as complex collaborative processes, within a real-life context where the researcher has little control over the process itself (Baxter and Jack 2008). Our case study, the 'Rijnwaardense Uiterwaarden', provides a source for analysis in which different





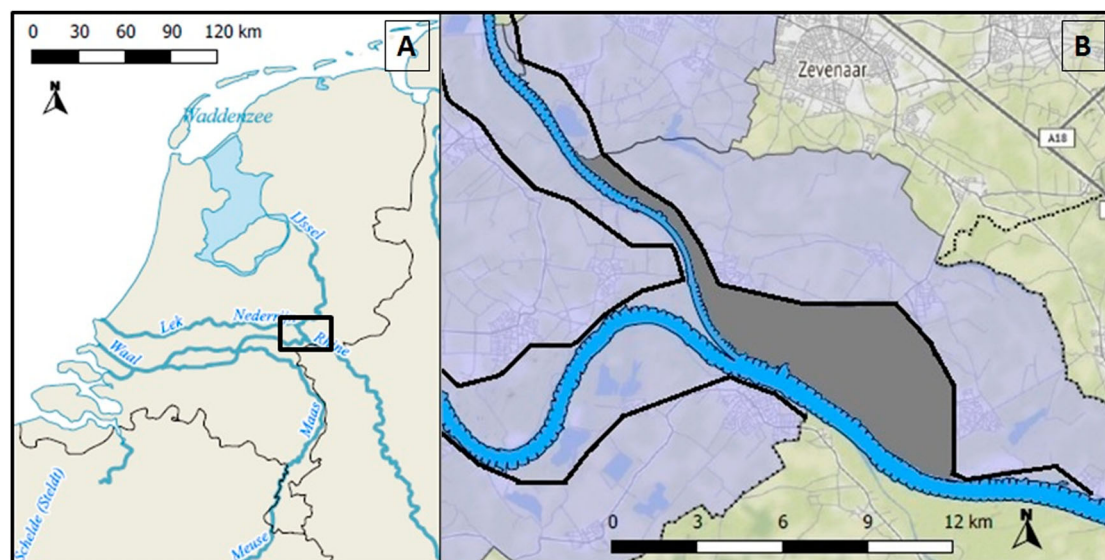
**Figure 1.** Analytical framework: a simplification of the collaborative governance model (starting conditions, collaborative process and outcomes) combined with two levels of collaborative partnerships. The stakeholder's lessons learned are presented by the broken circles and lines and refer to the three processes: (1) the Coordination Council, (2) the Stewardship, and (3) their interaction.

expertise, diverse stakeholder issues and divergent sectoral perspectives combine with the aim of maintaining floodplains.

### 3.1. Historical context of the case study

In 1993 and 1995, the Netherlands experienced a near flood of its major rivers that could have been catastrophic for society and economy. In 1995, more than 200,000 citizens were evacuated as a precautionary measure (Warner 2008). These events and the release of the 'Gelderse poort' development plan in 1995, in which nature restoration of floodplains became a central issue in the Netherlands, strongly influenced the redevelopment plan for the 'Rijnwaardense Uiterwaarden'

(Figure 2). The 'Rijnwaardense Uiterwaarden' plan incorporated the development of 500 hectares of new riverine nature and an increase in the discharge capacity of the area to a peak discharge capacity of 16,000 m<sup>3</sup>/s from 15,000 m<sup>3</sup>/s. Subsequently, this autonomous project element became part of the *Room for the River* programme (Rijke *et al.* 2012). In an effort to incorporate cultural and landscape values, the first draft plan was presented for consultation with land owners and local society in 1999. The draft plan also included a vision for project maintenance. Subsequently, the project was divided into six subprojects based on land ownership in an effort to operationalize the development plan. Two subprojects were led by Rijkswaterstaat (Directorate for Public Works and Water Management), that is, the executive agency



**Figure 2.** (A) Location of the study area in the Netherlands and (B) the floodplain area of the Rijnwaardense Uiterwaarden (dark grey), including the location of levees (black lines), the border with Germany (dashed line) and the geographical scope of the Gelderse Poort (light grey).

of the Ministry of Infrastructure and the Environment. Two subprojects were led by two different sand and clay mining companies (private land owners) and a further two subprojects were led by the now disbanded government Service for Land and Water Management; an agency of the Ministry of Economic Affairs. The project remained static until 2012, at which point the government established the Coordination Council that consists of the six project leaders and public representatives of the local municipality, water board and provincial government. The subproject leaders understood the need for the Coordination Council, because of the wider public goals for nature restoration and improving the flood protection level. So, together the members of the Coordination Council redesigned the draft plan for the entire floodplain. Later in 2012, an agreement of intent was signed by the six project leaders to ensure a collaborative mind-set, ongoing commitment and a coordinated approach when implementing the integrated redevelopment plan which will be implemented between 2015 and 2018.

Supplementary to the integrated redevelopment plan, the subproject leaders established a maintenance vision for the entire project area with the aim of keeping the integrated perspective alive following the required land-use changes, i.e. implementation of the redevelopment plan. Normally, the project leaders would each have made their own maintenance vision for their own properties and would enter into a contract with individual nature managers or farmers. The maintenance vision included long-term strategies, preferred maintenance activities and monitoring efforts to enhance nature development and safeguard flood protection in an integrated way. Reasons for this new collaborative process included the lowering of maintenance costs that result from resource sharing, and the enhancement of recreational activities as a result of the removal of fences between properties. A stakeholder's evaluation of the collaborative process surrounding the realization of a shared maintenance vision for the entire 'Rijnwaardense Uiterwaarden' is included in our study.

### 3.2. Selection of respondents and data analysis

Our research design is based on a qualitative research method that includes interviews, combined with a short questionnaire, participant observations and document analysis. Face-to-face interviews were held using a semi-structured interview guide which provided the most data. Semi-structured interview guides were used to ensure that the same topics were addressed by all participants, while allowing individual experiences and perceptions to emerge (Patton 1990). The semi-structured approach gives the interviewer an opportunity to probe for motivations and explanations, and creates space for innovative ideas or perceptions. In this way, both an integrated overview and detailed information can be obtained (Rubin and Rubin 2005).

Respondents were asked to reflect on their incentives for joining the collaboration, the collaborative process, outcomes and lessons learned. Specific questions dealt with the respondent's roles and activities, inclusion of stakeholders, and what went right or wrong during the collaborative process. These evaluation categories were based on the collaborative governance framework (Figure 1). Respondents were also asked to reflect on the allocation of public and private responsibilities for common maintenance tasks and expected future changes

concerning these tasks. In the United States, Parker *et al.* (2010) used a list of common tasks to define and understand the allocation of responsibilities between the coordinator and board members of watershed partnerships. In our study, a list of 18 maintenance tasks was extracted from Parker *et al.* (2010) and adapted to the issue of floodplain management. Respondents were asked to rate on a five-point Likert scale whether each task was predominantly a responsibility of government or private responsibility, for example with respect to tasks such as 'monitoring of riverine nature objectives' or 'developing a maintenance plan'.

In total, 12 respondents were interviewed (Table SD1): 2 private actors (resp. 1 and 3), 4 nature managers (resp. 4, 6, 8 and 13), and 6 public servants (reps. 2, 5, 7, 9, 10 and 11), including 2 mediators (resp. 2 and 10). Respondent 12 did not contribute to an interview, but answered some questions by email, and rated the 18 floodplain management tasks. Interviews lasted from 50 to 80 minutes each. All interviews were recorded and transcribed to facilitate data analysis.

In addition to interviews regarding the collaborative processes, several participant observations were made between September 2012 and November 2013. The first author attended seven meetings over a one-year period, five meetings of the Coordination Council and two meetings of the Stewardship. Observations were recorded as minutes and focused on the content of discussions and interactions among participants. Secondary data were obtained from documents including meeting minutes, reports, and the project website.

Text from all data sources was analysed based on Miles and Huberman's (1994) three-phase process: (1) data reduction, (2) data display, and (3) conclusion drawing. Once the data were reduced and organized into themes, the reduced data were labelled within these themes as positive or negative perspectives of the collaborative process. The third step featured the structuring phase and involved the creation of many tables and profile memos with the aim of organizing the respondent's answers or opinions per theme and per respondent. Software for qualitative data analysis (Atlas.ti) was applied during the analysing phase.

In the discussion section, we extract four different stakeholder perspectives on collaborative floodplain management and we relate findings from this study to previous research on collaborative governance and multi-stakeholder processes.

## 4. Results

This section presents the stakeholder's frames with regard to their incentives, the collaborative process, intermediate outcomes, and lessons learned. Both stakeholders from the Coordination Council and the Stewardship collaborative platforms are represented. Subsequently, respondent's reflections on the distribution of tasks between governmental and private organizations, and expected governance changes in floodplain management are given.

### 4.1. Coordination council: incentives and intermediate outcomes

This paragraph focuses on the collaborative process that occurred between project leaders in which they aimed to formulate a shared maintenance vision for the *Rijnwaardense Uiterwaarden*, a collaborative sub process of the Coordination Council. Respondents 1, 2, 3, 10 and a colleague of

respondent 11 were closely involved in this sub process. The municipality and provincial government (resp. 5 and 7) did not take part in the formulation of the maintenance vision, they were only a member of the Coordination Council.

Incentives to join the discussion on floodplain management in the Coordination Council among private land owners (resp. 1, 3, and 12) included: having a history of past cooperation and wishing that to be continued in the future; wanting to tune their own maintenance plan and objectives to the geographical floodplain area; and being part of the 'Rijnwaardense Uiterwaarden'. The incentives to join the collaborate process relate to issues such as historical relationships, alignment of objectives, and a moral imperative; 'there is no other way', based on the idea that they are the owners of land that is an intrinsic part of a greater area.

Governmental organizations framed incentives to join the collaborative process as 'we want to realize and maintain public goals (i.e. flood protection and nature goals) in the floodplain area'. Additionally, they saw the process as contributing to an assignment given by the Minister of Economic Affairs to implement cost-efficient and effective floodplain management. Similarly to private land owners, governmental organizations wanted to align objectives, especially by tuning objectives between governmental organizations.

A reason for the mediators (resp. 2 and 10) to facilitate the collaborative process was that this case study reflected the maintenance problems and challenges facing the entire Dutch river system. The goal of the collaborative process was to formulate a shared maintenance vision for the entire 'Rijnwaardense Uiterwaarden', to have a shared point of departure for the permit process, and to set a long-term strategy. Because each project leader needs to request permits for their land to implement the jointly formulated redevelopment plan, adding a maintenance vision to the permit request will be seen as an asset by the responsible authorities.

Ultimately, participants formulated an integrated maintenance vision in the form of a report by taking flood protection objectives, the natural, dynamic riverine system, and recreational activities into account. This strategic document for the entire floodplain was, according to all participants, the most important intermediate outcome of the collaborative process.

#### **4.2. Coordination council: collaborative process**

This paragraph describes the stakeholder's evaluation of the collaborative process up until the shared maintenance report was produced. In retrospect, the participants praised each other's commitment and openness when potential mutual gains were explored during the collaborative process. Respondents emphasized the issue of developing a better understanding. A mediator stated: 'there was a high degree of transparency and the participants were committed to the formulation of an integrated maintenance vision'. The participants appreciated a shared understanding: 'now we are familiar with each other and aware of each other's objectives and projects'. The atmosphere was described as friendly and constructive. A private land owner described the collaboration as a self-evident or natural process.

Negative attitudes were expressed by five out of seven participants regarding the prolonged and laborious process. A private land owner stated that the process had lasted longer

than expected. One reason posed for this was the voluntary character of process, which increased the amount of time required before consensus was reached. A public servant stated: 'there was no overriding authority to fall back on, this would have accelerated the process [of formulating an integrated vision]' (resp. 5).

In addition, a public servant suggested that private land owners focused primarily on the implementation of the redevelopment plans instead of discussing issues relating to the maintenance of the floodplain, which posed an obstacle to progress. A mediator described the private land owners as pragmatic people 'who live from day to day'. This attitude complicated the discussion regarding long-term visions and the formulation of a shared maintenance vision according to the mediator. Two public servants suggested that the diverse roles of Rijkswaterstaat (the roles of water authority and particularly land owner) were not sufficiently represented in the process.

#### **4.3. Coordination council: lessons learned**

Stakeholders formulated lessons learned based on their positive and negative interpretations of the starting conditions, process and intermediate outcomes. Two private land owners learned that you should keep the integrated approach in mind during the entire process, even after years of collaboration. A private land owner also stated that

I think that it [the collaborative process] is mainly the work of people. If everybody envisions the same goal then almost anything is possible, that should be the driving force among the participants. [...] It [the collaborative process] ultimately stands or falls with the willingness or unwillingness of the participants to co-operate.

This statement suggests that issues relating to the social aspects of collaboration are more important than the technical or financial issues.

The three public servants recapitulated lessons learned from the development of the maintenance vision with respect to collaborative advantages and inadequacy (incompleteness). One respondent expressed that it was useful to collaborate as opposed to working from 'our ivory towers'. In contrast, a second respondent stated that the shared vision itself was not sufficiently defined. Additionally, the collaborative process suffered as a result of insufficient internal communication within Rijkswaterstaat. A representative of Rijkswaterstaat was involved in the process, but this individual did not represent all the different objectives and underlying visions of their organization (both responsible authority for flood protection and land owner).

Mediators learned that, in practice, nobody really feels responsible for the combined objective of widespread, dynamic riverine nature and integrated floodplain management. In addition, the mediators discovered that triggering collaboration through financial incentives does not work for all participants. Governmental organizations tried to convince the private land owners to create a long-term vision together, to ultimately pursue cost-efficient floodplain management. Governmental organizations often based their arguments on the idea of economies of scale. However, the private land owners were more focused on integrating their maintenance vision with a multi-functional floodplain system, including possibilities for recreation.



#### 4.4. The stewardship: incentives and intermediate outcomes

After the formulation of the shared maintenance vision by public and private stakeholders in the Coordination Council, a second collaborative process was initiated on the action level. This second collaborative process was actualized by a platform called the Stewardship. The provincial government (resp. 9) formed the driving force behind the initial start-up of the Stewardship. The provincial government commissioned the same mediators (resp. 2 and 10) of the Coordination Council to search for collaborative arrangements between local nature managers (resp. 4, 6, 8, and 13) in an effort to operationalize the integrated maintenance vision of the Coordination Council. The collaborative process resulted in a shared action plan, which was presented to the members of the Coordination Council, but was finally rejected by Rijkswaterstaat.

In the context of decentralization, the provincial government stated that they are searching for opportunities to reduce maintenance costs because of declining state budgets allocated to the preservation and development of nature reserves. This incentivizes provincial government to stimulate the creation of nature managers partnerships (i.e. Stewardships) that are able to manage large floodplains more effectively and decrease its administrative burden. Another incentive of the provincial government was to increase political awareness of the potential relationship between maintaining nature and flood protection objectives (resp. 9).

The most important incentive for nature managers to join the collaborative process was: 'we already maintain a small piece of the floodplain area, but we would like to expand our maintenance activities'. Maintenance activities could consist of mowing and pruning of vegetation, or introducing year round grazing by introducing 'wild' animals, such as Highland cattle to the floodplain area. One nature manager stated that their organization would like to be of value to other nature conservation organizations and build its reputation as a reliable nature manager with the provincial government, who initiated the collaborative process. The same nature manager stated that possible inconsistencies between their wilderness vision and others from neighbouring floodplains were an incentive not to join the collaborative process.

#### 4.5. The stewardship: collaborative process

This paragraph describes the stakeholder's reflection on the collaborative process between nature managers to write a shared action plan (resp. 4, 6, 8, and 13). The process began with some mistrust between stakeholders. All nature managers saw each other as competitors, because each of them suggested that they would be able to maintain the entire floodplain area on their own. Therefore, the first meeting initiated by the mediators was designed to build trust and develop a better understanding. All participants appreciated that the participants were able to easily identify short- and long-term objectives for collaboration. In addition, the participants quickly and clearly identified roles for each participant in the process. All the nature managers were very positive about the mutual collaboration and the open exchange of knowledge and information, despite the sometimes tough negotiations. An important intermediate outcome of the process was the mutual recognition of the

requirement for combining agricultural activities with nature management. A nature manager positively framed the organization of informal meetings that occurred without mediator involvement, which improved relationships and trust. A second nature manager was enthusiastic about the increased solidarity that occurred during the process. According to the provincial government, the process went smoothly because of the strong motivation of nature managers, who were driven by money-making opportunities. Moreover, a mediator stated that the nature managers were committed to writing an action plan together instead of individually.

Additionally, the nature managers reflected on some negative experiences of the process. Firstly, it was difficult to estimate a budget for the proposal. Reasons for this problem included the use of different calculation methods among nature managers, and a lack of data concerning financial benefits and costs of maintenance, especially relating to large-scale grazing. A nature manager stated that the collaborative process was delayed because of a lack of clarity surrounding the state and provincial budgets for maintenance activities, including the availability of subsidies.

#### 4.6. The stewardship: lessons learned

The overall lesson learned by the nature managers is that the collaborative process increased the level of trust between them. A nature manager also learned that more stakeholders could contribute to a 'wilderness' strategy. The wilderness strategy is a management paradigm which is based on the idea of restoring the dynamic, natural floodplain landscape through minimization of human interventions, i.e. a system of 'self-regulating nature' (see for more information; Fliervoet *et al.* 2013). The aim of this approach is to improve the biodiversity and nature value of the floodplains. Another nature manager highlighted the need for an independent organization to facilitate collaborative processes, or more specifically to facilitate the negotiation process and to support the quest towards a shared action plan.

The mediators learned that maintenance costs will decrease dramatically when large floodplain areas instead of small individual properties are maintained. Another nature manager acknowledged an increased understanding of insights about grazing management on a large-scale, especially the introduction of wild or semi-domestic herbivores, such as European bison or wild horses (elements of the wilderness ecological reference). The introduction of natural grazing contributes to the restoration of natural dynamics in the floodplain area.

#### 4.7. Evaluation of the interaction and overall lessons learned

The previous paragraphs describe the stakeholder's frames on the two separate collaborative processes undertaken by the Coordination Council and the Stewardship. However, there was also close interaction between the two platforms. Firstly, the maintenance vision of the Coordination Council was used as input for the activities of the Stewardship. Secondly, the management proposal formulated by the nature managers was delivered to the Coordination Council. However, Rijkswaterstaat rejected this management proposal. The rejection was based on two fundamental arguments: (1) the proposal did not conform to the procurement rules of Rijkswaterstaat,

and (2), as stated by the Rijkswaterstaat representative, ‘We [Rijkswaterstaat] have within the last two years wanted to use maintenance activities in floodplain areas as a form of income generation’. ‘The former argument is related to a requirement to openly tender management activities rather than allocating them directly to specific nature organizations. The latter argument relates to the need to create additional income streams in response to recent financial cuts applied to the department of real estate within Rijkswaterstaat.’

The rejection of the action plan by Rijkswaterstaat and their associated retreat with respect to the shared maintenance vision revealed the mismatch between the two collaborative organizational and action levels. Respondents-related problems such as the exclusion of stakeholders, the power of Rijkswaterstaat, poor communication, and the conflicting objectives of governmental organizations. All nature managers and the provincial government realized that they had not sufficiently encouraged the involvement of land owners and funding authorities, especially the department of real estate of Rijkswaterstaat, on the action level. According to a nature manager, the rejection of the management proposal reflects the difficult relationship with Rijkswaterstaat, ‘which is often revealed at the end of the process’. As a result of the process, all nature managers became very pessimistic about realizing collaborative arrangements with Rijkswaterstaat. The local nature managers feared that the tender process may exclude them because they expect that only large organizations are able to tender based on the large property of Rijkswaterstaat. Nature managers also highlighted the poor communication and coordination between governmental organizations. This is demonstrated by the initiation and facilitation of collaboration between nature managers by provincial government and the inability of Rijkswaterstaat to do direct business with a partnership of local nature managers.

A private land owner was surprised about the ease by which Rijkswaterstaat can pursue its own plan and strategy, despite a need for public accountability. According to a public servant, this pursuit of self-interest was already visible in the Coordination Council, where the maintenance vision seemed to be more a part of the mediator’s rather than the private land owner’s agenda. In addition, private land owners and public servants highlighted the differences between governmental organizations. This manifested in the different learning goals set by the provincial government and Rijkswaterstaat concerning collaborative processes on the action level. Finally, one public servant stated: ‘we could have foreseen these results 5 or 10 years ago’. This statement refers to the slow and prolonged process of floodplain management and the poor learning capacity of the authorities.

The mediators expressed learning goals that were related to the process context, namely ‘the current conditions reinforce segregation instead of integration of maintenance activities’. They stressed the conflicting policies of nature versus flood protection as a huge obstacle for the initiation of collaboration. They also emphasized the poor coordination that exists between governmental organizations. Additionally, the mediators learned that the internal institutional goals of governmental organizations, specifically the economic perspective of Rijkswaterstaat, prevent collaboration. A mediator stated that ‘we [the Netherlands] miss a catalysing vision for integrated floodplain management’. This statement refers to the lack of a reference or integrated vision for floodplain management on a policy level.

#### **4.8. Stakeholder’s assessment on the allocation of tasks**

A list of 18 common maintenance tasks was used to explore the respondent’s perspective on public and private obligations with respect to floodplain maintenance. As Table 1 shows the respondents considered that the majority of tasks are the responsibility of government or a shared responsibility. Tasks relating to flood protection, such as monitoring and developing flood protection objectives, are clearly considered to be governmental tasks, in contrast with nature tasks. Private organizations especially consider the monitoring of nature objectives as a shared responsibility. Tasks relating to the involvement of local society and the application of scientific knowledge in the field are also seen as a shared responsibility. According to the respondents, private responsibilities include tasks such as the implementation of maintenance measures (mowing, pruning, etc.), involving volunteers, and the establishment of Stewardships. Interestingly, results relating to the task of ‘directing function in floodplain management’ are inconsistent. Representatives of the private organizations suggested that this is a governmental responsibility and vice versa.

##### **4.8.1. Future collaboration**

The previous paragraph described the stakeholder’s assessment on the current tasks relating to floodplain management. Additionally, respondents were asked to reflect on their future responsibilities and tasks. The majority of respondents expected a shift towards more collaboration between public and private organizations (10 out of 12). Land owners envisioned an increase in private obligations with respect to the realization and maintenance of riverine nature and foresaw an increase in collaborative processes relating to monitoring activities. Additionally, land owners referred to the increased attention devoted to corporate social responsibility (CSR), which implies that private organizations are responsible for their regional and local surroundings. Private organizations are motivated by profit, but they are also aware of the importance of including local environmental and societal issues in their businesses plans.

The most important shift according to public servants is the commercialization of maintenance activities on properties owned by Rijkswaterstaat through tendering. With this in mind, a public servant expected greater collaboration between Rijkswaterstaat and other land owners and nature managers. However, according to the same public servant, in the last 5–10 years there has not been any progress towards this goal. Two public servants did not expect a significant shift towards collaboration and stated that the government should take on the role of strategic planner, and should encourage greater freedom for regional and local decision-making processes in floodplain management. A public servant stated that decisions are currently guided purely by flood protection objectives (flood protection-centric), and that no integrated (multi-centric) vision is applied to maintain floodplains.

A nature manager added that the responsibility for tasks concerning ‘developing guidelines and rules’ and ‘developing a maintenance plan for a floodplain’ will shift to private organizations. In addition, local nature managers desire more responsibility in maintaining floodplains in order to become more creative and to make better use of local

**Table 1.** Stakeholder's ( $N = 13$ ) assessment of the allocation of maintenance tasks between governmental and private organizations.

Tasks	Governmental task	Predominantly government	Both	Predominantly Private organizations	Private task	Don't know
(1) Monitoring flood safety	10(5)	3(1)				
(2) Monitoring nature objectives	3(1)	3(0)	6(5)	1(0)		
(3) Involvement of local public		1(1)	9(3)	2(1)	1(1)	
(4) Introduction of new maintenance measures		2(0)	7(4)	4(1)		1(1)
(5) Involvement of volunteers			5(2)	5(2)	2(1)	1(1)
(6) Developing flood safety objectives	12(6)	1(0)				
(7) Developing nature objectives	7(2)	3(1)	3(3)			
(8) Integrating financial resources	7(2)	3(1)	2(2)			1(1)
(9) Aligning flood safety and nature objectives	5(2)	4(0)	4(4)			
(10) Implementation of maintenance measures			3(2)	6(3)	4(1)	
(11) Facilitation of meetings between governments, land owners and nature managers	2(0)	4(2)	6(3)			1(1)
(12) Setting the agenda for floodplain management along the Waal River	3(0)	2(1)	6(4)	1(0)		1(1)
(13) Apply scientific knowledge in the field		2(1)	8(3)	2(1)		1(1)
(14) Authorization of measures	11(5)		1(1)		1(0)	
(15) Establishment of watershed partnerships (i.e. Stewardships)			4(2)	5(2)	2(1)	2(1)
(16) Directing function in floodplain management	2(1)	4(1)	3(2)	3(0)	1(1)	1(1)
(17) Developing guidelines and rules	2(2)	6(2)	3(1)	2(0)		1(1)
(18) Developing a maintenance plan for a floodplain	1(1)	4(1)	4(2)	4(1)		1(1)

Notes: The first number indicates the total number of responses, the number between brackets indicates how many were from private respondents. One governmental respondent gave two responses for task 4, 16, 17 and 18.

knowledge. However, they envision obstacles in the form of the tender process and the strict and detailed nature objectives. It was thought that the tender process would attract large nature conservation organizations and that local organizations will be outcompeted from participation. The latter tension expresses the conflict between the detailed nature objectives formulated by the provincial government, and the more 'dynamic riverine nature' vision of some nature managers.

## 5. Discussion

The results describe the stakeholder's reflections on their incentives, the collaborative process, outcomes, responsibilities and lessons learned in the context of collaborative floodplain management. Collaboration was fostered by building new partnerships on an organizational and action level, which is important for capacity building (Imperial 2005). Moreover, the respondents referred to an increased content knowledge and a better understanding of each other's objectives through the collaborative process. Intermediate outcomes were identified on both levels, especially the development of an integrated maintenance vision and an action plan. Despite the open and transparent collaborative processes, the goal of solving the fragmented and conflicted nature of maintenance activities was never fulfilled. To better define the challenges of sustaining a collaborative governance approach to maintain multi-functional floodplains, the discussion is divided into sections relating to multi-actor, multi-scale and multi-sector challenges (similar to Dewulf *et al.* 2015).

### 5.1. Multi-actor challenges; underlying perspectives, roles and responsibilities of public and private organizations

Respondents framed a number of different incentives that encouraged participation in the collaborative platforms; however, two shared incentives were found: (1) recognition among participants of their interdependence, and (2) the

incentive to align the organization's goals and objectives to other stakeholders. In literature, the later incentive is one of the most important motives for participation in watershed partnerships (Leach *et al.* 2002). Moreover, these incentives provide a shared set of stakeholder goals and produce a sense of togetherness. However, analysis of the allocation of tasks with regard to public and private responsibilities in floodplain management revealed an imbalanced image. The majority of management tasks are considered to be the responsibility of the public organizations, especially the maintenance tasks with regard to flood protection. This reflects the long history of dominance and trust that people have in Rijkswaterstaat. Verbrugge *et al.* (2016) showed that Dutch society does not feel responsible for flood protection, or feel the need to participate in decisions relating to it. Crabbé *et al.* (2015) compared policy frames and flood management practices in the Netherlands and Belgium and showed how a specific framing of flood risk management leads to a specific allocation of responsibilities which in turn may reinforce the existing management frame. Because of such path-dependencies, the allocation of responsibilities between public and private parties cannot be changed easily in flood management (Crabbé *et al.* 2015).

The dual role of Rijkswaterstaat as responsible water authority and land owner created a complex and ambiguous collaborative process. During the process the collaborative aims and role of Rijkswaterstaat were unclear to the majority of the respondents. In addition, the multiple roles and size of the organization resulted in the appearance of different representatives of Rijkswaterstaat at different times, which slowed the process and reduced the adherent to previous agreements. During the later stages of the collaborative process, Rijkswaterstaat reframed their role from that of water authority to that of land owner who wishes to use their land as a source of income. This is quite a logical choice from the perspective of Rijkswaterstaat which has faced severe budgetary cuts applied by central government. In conclusion, the following underlying perspectives were derived from the collaborative floodplain management case study. These perspectives should be addressed in practice to enable integrated floodplain management:

- Supplementary to their role as responsible authority for flood protection, Rijkswaterstaat pursues a market-orientated approach or economic perspective with respect to the maintenance of floodplains. This perspective is reflected in the use of tenders, commercialization of maintenance activities, and its focus on cost-efficient floodplain management.
- The provincial government (authority for nature goals) applies a collaborative perspective as a governance strategy with the aim of decreasing its own administrative burden in relation to nature subsidies. Additionally, the collaborative perspective helps to promote issues of maintaining nature and flood protection goals in the political arena.
- Private land owners hold a locally based perspective which is actualized by giving attention to corporate social responsibility (CSR) through the application of local community values (e.g. recreational values) that ensures a continuation of business opportunities.
- Nature managers pursue more self-determination in the maintenance of floodplains in order to implement nature conservation activities that include collaboration with local communities and volunteers and enhance the dynamic riverine ecosystem while taking agricultural activities into account.

In this case study, Rijkswaterstaat used its regulatory powers to implement its own policy and reach its own objectives, which frustrated collaboration. Rijkswaterstaat pursued a policy of income generation from their properties by calling for tenders instead of undertaking maintenance activities with a partnership of local nature managers (especially in the form of hiring properties to individual farmers or large nature conservation organizations). The local nature managers feared that they would be outcompeted, because they expected that the tender process would only attract large nature conservation organizations. Moreover, private land owners wanted to include the local community and local nature managers in collaboration to ensure the continuity of their businesses. The market-approach adopted by Rijkswaterstaat and the fear of exclusion of local nature managers are factors that can lead to a crowding-out the intrinsic motivation to act co-operatively (Vollan 2008). The crowding-out effect seems to create a new dilemma for the authorities because in this case they have to choose between the commercialization of maintenance activities (making a profit), and cooperation with local and regional stakeholders. The most challenging aspect is the need to reconcile these different underlying perspectives before realizing integrated and collaborative floodplain management.

## 5.2. Multi-scale challenges; different levels of collaboration

Governance of floodplain management is addressed on multiple scales and levels. This study analysed collaborative processes on two separate levels; an organizational level and action level. At the organizational level, public and private participants aligned their objectives based on a type of coordination strategy. This strategy is defined as ‘an interaction between participants in which formal linkages are mobilized because some assistance from others is needed to achieve organizational goals’ (McNamara 2012, p. 391). At the action level, the private participants seemed to pursue a

collaboration strategy. McNamara (2012, p. 391) defines a collaboration strategy as ‘an interaction between participants who work together to pursue complex goals (integrated floodplain management) based on shared interests and a collective responsibility for interconnected tasks which cannot be accomplished individually’. Our results are similar to the study of Robinson *et al.* (2011) who showed that action-level groups often discuss specific projects and activities, while organizational-level groups work to align organizational programmes and priorities. But the stakeholders appeared not to define a strategy aimed at connecting the two levels of collaboration. This lack of interaction is partly to blame for the implementation gap.

Additionally, public organizations need to take into account objectives and issues relating to administrative scales (EU, national, provincial, and municipal) in collaborative processes (i.e. van Lieshout *et al.* 2011). Our results show a clear mismatch between national goals and regional goals within Rijkswaterstaat. On a national level, the main aim of Rijkswaterstaat is the realization and maintenance of flood protection, preferably in association with regional or local platforms that reduces the amount of contracts and landscape fragmentation resulting from multiple ownership. However, the regional department of real estate of Rijkswaterstaat displayed a profit motive with regard to maintenance activities. This economic perspective prevented collaboration on an action level and indicated that conflicting interests resulted from different internal institutional goals of Rijkswaterstaat. These conflicting interests demonstrate a mismatch between different administrative scales.

In conclusion, the issue of collaborative maintenance cuts across the jurisdictions of national, regional and local public organizations, however, there is no integrated vision for floodplain management (multi-centric) to connect and attune different policy levels. The lack of an integrated vision is reflected in the stakeholder’s argument that nobody feels responsible for integrated floodplain management and the complaint that an overriding authority is missing. Moreover, when attempting to establish responsibility for the task of ‘directing function in floodplain management’ (Table 1), representatives of private organizations suggest that government should take responsibility while the representatives of governmental organizations suggest that private organizations should be responsible.

## 5.3. Multi-sector challenges; issues of integrating flood protection and nature objectives

Conflicts of interest are not only found within an organization, but also between the water sector (focus on flood protection) and nature sector (focus on nature conservation). Flood protection and nature policies are closely connected, but at the same time the responsible governmental institutions and processes are fragmented and not capable of developing and realizing integration (Fliervoet *et al.* 2016). This explains why respondents frame the very poor coordination between both sectors as an important problem that prevents integration of maintenance activities on a floodplain scale. Moreover, public organizations use different financial systems to support maintenance activities. Land owners have an obligation to maintain flood protection levels according to water policy and at the same time they are eligible for receiving subsidies for nature conservation. Furthermore, the



majority of nature reserves in the floodplains are protected under the European Natura 2000 legislation. Nature managers aim to enhance nature development, while water managers intend to minimize vegetation development in floodplain areas to maintain flood protection making it difficult to align both sets of goals in the same geographical area. In other words, the current regulations choke collaborative processes (c.f. the treat of regulations: e.g. Bentrup 2001). This dilemma impacts land owners most severely because they need to foster both goals on their properties.

The contradiction between nature and flood management goals highlights the need for an integrated (multi-centric) vision on a policy level, which addresses the lack of synergy between flood protection objectives and nature objectives with clear guidelines and ground rules. Moreover, on an organizational level, a close collaboration between the provincial government (responsible authority for nature goals) and Rijkswaterstaat (responsible authority for flood protection) would enhance integrative and collaborative governance on an action level.

## 6. Conclusion and implications

In this section conclusions are drawn by answering the research questions and implications for collaborative arrangements in maintaining multi-functional floodplains are given. The stakeholders' reflections on the collaborative case study show that formulating integrated maintenance plans for floodplains with involvement of multiple stakeholders is certainly possible, but implementing them causes multi-actor challenges, such as the conflicting underlying perspectives. Tension results from the economic perspective of Rijkswaterstaat, which could not be aligned with a locally based collaborative approach to resolve fragmented maintenance activities in the floodplains. This tension may eventually reduce the intrinsic motivation to act cooperatively (i.e. crowding-out effect), despite of the participants' recognition of their interdependence and the need to align their organizations' objectives with other stakeholders.

The most important obstacles observed by the participants are the lack of an overarching integrated maintenance vision for the Dutch floodplains and the lack of coordination between the (water and nature) authorities. These multi-scale and multi-sector issues resulted in the decoupling of the collaborative processes between the organizational and action levels. Moreover, these issues illustrate the inflexibility of the existing institutional setting of Dutch river management, which is also fuelled by the conflicting policies between the water and nature sectors. This problem of nested hierarchy of multiple public organizations that hinders new collaborative arrangements is also found in America and Australia (Ananda and Proctor 2013, Wyborn and Bixler 2013).

The participants' defined the majority of the maintenance tasks as governmental responsibilities, which underlines the dominant and hierarchical role of public organizations and the lack of shared responsibility.

To achieve integrative and collaborative governance in the future, the challenges inferred from our results need to be addressed: reframing the underlying perspectives, enhancing flexibility of public organizations and increasing shared responsibility. These challenges demand a more collaborative-learning approach, including social learning processes

to tackle value differences, flexible budgets, and more attention to local perspectives. Water policies should include more locally based knowledge and perspectives to transfer more responsibilities to local and private stakeholders (Bergsma 2016). Additionally, more research is needed on the roles and relationships of the public organizations operating at different collaborative levels in the maintenance of floodplains.

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